Farrington High School Introduction to Faculty Resource Portal – Usability Study

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Abstract: Many organizations use internet portals or intranets to unify update their employees with current up-to-date information and resources. Hawaii Department of Education (HIDOE) is moving towards digitizing many of their resources that were once in physical form (papers, brochures, attendance sheets etc.). Educators need support in finding these digital resources. Many of these digital resources are useful, but the links to them are hard to remember and type.

The purpose of this usability study was to create and evaluate the ease-of-use and navigation of Farrington High Schools Faculty Portal (https://www.farringtonhighschool.org/faculty/). This website is a portal with access to many of the DOE resources and Information that faculty at Farrington High School need to complete their duties. The portal was designed with modern website design principals as well as the Gestalt's Principles of Universal Design. The website's usability was judged using Nielson's severity rating scale. The usability study recruited 15 participants (3 rounds of 5 participants) who judged the navigation and usability of the website based on various scenarios. Three rounds of usability testing were conducted. Participants filled out and completed a survey during the study. Results collected indicated positive user experiences and many of the data was used to improve on website iterations. We will further explain the approach to the usability study and its outcomes. We will look at the methodology, design techniques and strategies, results of the student and discuss the lessons learned from the study.

Statement of Problem

Technology is becoming a huge and integral part of today's society, work environments and educational environments. Teachers and students use technology from a day to day basis. Teachers today must use various online resources and physical resources to accomplish their duties. Teachers use quite a few mandatory websites for their responsibilities with news ones added and sometime current ones changing their links. The physical forms used by the school are also always being constantly changed, different versions of the form are floating around campus and it can be tough to distinguish the newest forms from the older ones without fully reading through. Inboxes to individuals and calls to different classes and the front offices are made in frenzy to find out what had happened. This creates a confusion, disruption and inefficiencies in some of the daily teacher's workflow.

Many organizations, universities, hospitals and Fortune 500 companies use an employee portal to unify and keep their employees updated. An employee portal (also called enterprise portal or intranet portal) is a site where you can easily share and discuss information within your company or organization, and keep all your staff on the same page. Employees can access company daily memos/updates, resources, links, websites, forms, directories, contacts and more

Farrington High School had a website; however, its main use is promoted school memos, and information to students, parents and visitors. I (a tech coordinator of the school and teacher) have witnessed teachers spend countless hours physically finding forms or searching emails for links and to specific web sites. I want to create a portal that is attached and part of the schools website as a single site for employees to access resources. It will encompass and have the newest versions of physical forms to access and it will combine all the various web resources and tutorial teachers must visit into one page.

The updated preschool website ensures a resource where parents may turn to if they need last minute reminders or resources to assist their child at home. The updated portal will be designed and tested using various different techniques, protocols, and concepts that I have learned throughout my career and also in my training in the Learning Design in Technology (LTEC) program.

Literature Review

Liu's (2008) article "Usability Evaluation on Websites" discussed that a usability study should be done during the planning stages of a website before major content is decided on and published. In looking for usability issues with a website, although many users are useful in usability testing, majority of issues can be found with a smaller population. Sometimes having a large number or too large of a number of participants may yield very little or no increased information or data use to improve the usability study.

When applying gestalts theory of interactive media designs, one of the techniques is to help to identify figure from ground, allowing users of a website to distinguish contrasting colors to separate things such as buttons from a background. The discussion of making buttons, pictures or even words in an aligned grid format allowed the user to focus on speed of getting to content and reduces brain processing into searching for specific words on a messy screen. The article discusses that websites also have a flow of information, and that it allows eyes to search instead of hopping all over the website. This allows for the website to be practical and easy to use. Graham, L. (2008).

Hsiao, S., & Chou, J. (2006) discuss Gestalts theory in web design. They suggest presenting a webpage as a "wholeness" to allow for an easy usability for the user. Websites can be thought of as a plane grid with lines intersecting, allowing for materials to be placed nicely and aligned so that the users do not see many disjoined or crooked alignments that may prevent the page from looking unwhole.

There are many factors that contribute to repeat visits for a website Rosen, D. E., & Purinton, E. (2004). Content can be text, pictures or graphics, and if the right website decisions are made, it will entice return visitors to the website. It will be critical for work use, and make a person's daily workflow much more efficient. In our case we are looking to make a portal/intranet that will entice users as it will keep up to date information laid out nicely all in one place for our return users.

Nielsen (2000) discusses a strong test for the severity of usability problems. It teaches me to learn how to deal with usability problems and which to consider not fixing. We must consider the frequency with which the problem occurs and is it common or rare? We must consider the impact of the problem if it occurs and if it is difficult for the users to overcome? We also must take a look at the persistence of the problem. Is it a one-time problem that users can overcome, or something that users are always bothered by?

Smyth, J. D., Dillman, D. A., Christian, L. M., & Stern, M. J. (2006) discuss how graphical proximity in a webpage allows for natural groupings in a person's mindset. Well placed elements in a website may not need to have headers to distinguish what they are. This helps me in my study to categorize the teacher's resources in specific proximity. For example, I see that teachers have resources for grading and attendance, which is something they use daily and might be grouped together, they also have resources for managing their payroll and employment which might be another area. The study explains that if headers are not used, they are also able to separate and categorize elements by separating them in one page by borders, color, or even size. This allows our brains to naturally adjust items to their specific categories and domains.

Methodology

Research Questions/Goals.

The goal of the usability study was to gauge the participant's use of the web portal website as they navigated, located information, traveled to websites and measured the participant effectiveness and participant satisfaction with the website. Participants were asked to complete a few scenarios read aloud to them during the study. These scenarios were derived from the following research questions:

1. How easy or difficult is it to find the faculty portal?
2. How easy or difficult is it to find school specific and Department of Education (DOE) resources on the portal?
3. How easy or difficult is it for teachers to find websites needed for completing teacher responsibilities? (Taking attendance, inputting grades etc.)

Content Analysis.

Farrington High Schools website consists of information for students parents to keep up to date with school news. The site has a variety of different menu options for students to choose from. Initially the website does not have much use for faculty of the school, other than to post announcements for students. I will be building a specific page or portal on the Farrington High School website.

Currently, faculty rely on bookmarking the constantly changing websites to turn in student grades and attendance, look for pay stubs/W2's, request for substitutes, request for tech support and custodial support. The list of resources and websites that faculty must visit change and increase with time, making it confusing for faculty.

The Farrington Faculty Portal provides faculty with important links for finding information about managing their classrooms, grades, employment and resources Hawaii Department of Education (DOE). The Faculty page/portal will

be an ongoing and continuing project and will have important, resources, websites, announcements and links for the school's faculty to use to accomplish daily duties. This will ease the faculty's workload by providing a "one stop shop" for them to be updated and to accomplish their work.

Participants.

The usability participants for my project consisted of teachers from Farrington High School. The 15 participants' ages range from their early 20's - late 50's with a wide range of technological experience and usage. They all had different educational backgrounds, races, genders and ethnicities. Personal information such as names will not be collected. I am also a teacher at the school and share some of the same responsibilities with these teachers.

Participants were recruited through a letter and word of mouth. They were also recruited through school faculty email. The letter introduced the purpose of my study, what is required of them (Participant) if they should decide to participate (setting, time, date, etc.), how their data will be used, and the required consent forms.

If the participant was interested, he or she reached out to me and I will provide an email to prospective participants requesting a testing time, date, and delivery method (face to face or remote). Participants were informed that they could stop their involvement any time in the study at any time. Additional information regarding compensation, benefits, and risks in participating in the study will be provided to the participants. Participants will be tested and asked to perform tasks based scenarios on a script using a script to ensure consistency between participants. Upon completion of the tasks and scripts, participants were thanked for their participation, and requested to complete a post-survey in Google Forms.

Neilson and Lanauer (2012) say and claim that "5 users are enough to catch 85% of problems on practically all websites". Dumas and Redish (1999) states that "5-12 testers are enough in a test". Through my research, I decided that I would have a participant population of 17 for my cognitive prototype. This helps me to ensure that I have enough information to create, have and make an effective Faculty Portal website that aligns with my project's purpose statement.

Liu's (2008) article "Usability Evaluation on Websites" discussed that a usability study should be done during the planning stages of a website before major content is decided on and published. A large number of participants allows for a higher representation amongst one's target population, however, it was cited and mentioned that majority of problems from website usability can be found using a smaller population of participants. She goes into detail about

how large number of participants may have no or just a small percent of increased data to improve usability.

Due to the limited amount of time to plan, design, and create the Faculty Portal, the testing prototype only encompassed a small amount of resources that will be available to the user when the website is completed. However, majority of key components and layouts will be created and tested through the cognitive walkthrough. The scenarios that the participants will be tested on will be adjusted so that participants are able to successfully complete each one. The Faculty Portal/Intranet prototype will also completed enough that participants were able to make accurate assumptions on the type of resources that would be available on the faculty portal/intranet.

Participating in this study will be completely voluntary and carried out after school work and prep time. There will be no monetary compensation to participants. There will be minimal risk to individuals who participated in the study. Participants have the option to take a break or to stop the testing session if they somehow felt fatigued or any other physical discomfort during the study. There was no direct benefit to individuals who participated in the study. However, participants were more willing to do further research into the topics covered. They may also have other people in mind to share the idea and study with. There is no direct benefit to participating in the usability study, other than being able to use the internal portal earlier than other faculty on campus.

Evaluation Instruments

The evaluation instruments that I used throughout my usability study included:

1. Google Hangouts (Cognitive Walkthrough)
2. In person meeting.
3. Pre and Post task verbal questions
4. Post task survey

Google Hangouts or in person meetings will be used through the cognitive walkthrough. This program recorded both video and audio of the participants as they were asked the pre and post task verbal questions, asked to complete the provided tasks, and asked to verbally dictate their thinking process. I was also able to take notes on the users facial expressions and body language. Google Hangouts allowed me to revisit the participants and their feedback throughout the project's development and data analysis.

The pre and post scenario verbal questions were asked to get some background of each participant and their interest in the project. These questions were used to assist in the creation of the final project write up and provide me with valuable feedback as I continued to improve on

Farrington's Faculty Portal/Intranet

The post task survey was the final evaluation instrument that I used. This will assist me in getting my demographic information and allowing participants to provide me with other types of feedback done. By using Google forms, without my presence, I provided various different ways of presenting feedback, allowing me to generate more honest and deeper insight on what components were working for my project and areas that need further assistance.

After my cognitive walkthroughs are completed the data will be reviewed and displayed through a rating scale of errors. Participant's comments and data will be scrutinized and will be rated on how severe the issue was in completing the tasks and ease of use.

The Nielsen's Scale of Severity will be used for analyzing feedback.

The rating scale of 0-4 was used with 0 being minor visual errors and 4 being severe errors that could prove to be catastrophic if the website goes live.

According to Nielsen (1995) the scale is dependent on three different factors: frequency, impact, and persistence.

Frequency refers to the question "How common or uncommon is the error?"

Impact refers to the question "Will it be easy or difficult for the users to overcome?

Persistence refers to the question, "Does the user have to overcome this issue once or multiple times throughout the testing time?" Data will also be interpreted and analyzed through graphs and tables to show how participants felt their test will go as well as their demographics.

Project Design

Deborah E. Rosena and Elizabeth Purintonb's (2004) article "Website design: Viewing the web as a cognitive landscape" and Gestalt's Theory helped me to understand and create the overall visual design of the website, helping to ensure that everything flows nicely and allows for easier navigation by the user. Buttons placed in a grid view will help to ensure it looks spatially pleasing using proximity methods and design techniques.

Rosena's and Purintonb's (2004) article on website design helped me to understand how to go about cognitive walkthroughs and questioning to iterate on website designs in order to make more aesthetically pleasing. Allowing them to become returning users.

Figure and Ground

The principle helped the target audience to focus their attention on the primary content or contents of the portal, with the most used and frequent resources being placed at the top of the page. We used a simple gray and white color scheme and a grid view to allow the users to see a wide level view of resources that they have access to.

Proxy and Grouping

The principle helped to ensuring that the design and layout of the website promoted flow and ensure that similar things were grouped together. Many of the services that relate to each other are grouped together. Some of the other services are also grouped together because they are used for daily work duties, making them easily accessible without much scrolling and searching.

Closure

The use of a wide grid design and contrasted colors allows for users to distinguish clickable buttons from backgrounds regardless of screen size and device used.
I was able to create drafts of the schools website using Google Drawings.

As I started envisioning and working with my tools, I started creating draft HTML pages on Wordpress. The school website is built off of Wordpress. I was able to create mockups of the Faculty portal on an unpublished webpage. The draft of the site was used to test the flow of the portal. The use of Gestalts Principles were used during the entire prototype

Procedures

Before recruiting and starting the usability study, I completed the CITI Program courses and submit the required information and documentation to the University of Hawai‘i Institutional Review Board (IRB) eProtocol Recruitment and testing will begin once IRB approval for the study is given.

Surveys, task accomplishment and Nielsen’s Scale of Severity were used for analyzing feedback with three rounds of testing with 5 participants in each round, Before starting the usability testing sessions, participants were given a consent form and a pre-survey as well as a copy of the consent form.

All test sessions was conducted in a classroom at Farrington High School with agreed time for participant or online through Google Hangouts. Once consent is given, I began testing with the participant. I introduced the purpose of the usability study and information about general testing procedures.

Participants were encouraged and asked to think out loud while going through the tasks. I will collect data on time needed to complete task. At the end of each testing, I held a brief interview, or question and answer survey to gather qualitative data to improve the usability of the site. I gave a post-survey with participants after each usability test session to learn about the user experience of the design layout, navigation, ease of use, effectiveness, and participation.

After the usability study with all the participants, I observed the notes and screen recordings (if any) to determine if improvements to the website are needed. Revisions were made for round two of testing. The data gathered and collected from participation were solely for this usability study and electronically filed and secured on a password protected computer. Once the research and data analysis is completed, any video and audio records will be destroyed. No names were collected during the usability study. Participants will be named as participant 1, participant 2 all the way to participant 5. This helped me to identify participants for round 3 of studies.

Results

After 3 rounds of testing and having all 15 participants complete the usability study, there were many things that I looked to improve on the project.

For the design and usability portion of the website, I used Neilson's Severity Scale Rating. In between each testing session, I logged and tracked all of the verbal feedback and quantitative feedback that I was able to gather during the testing session. I educated the users on Neilson's Severity Scale. The user ranks the difficulty of the task from 0-4 as they completed the tasks. The rating scale that was used was used to determine the priorities in which I fixed the issues on the website. After each round, I analyzed my data to look at the success rate at which the participants are able to complete the task. The results were used and compared to see if the newer changes may help the task for future rounds. I also wanted to learn about what hindered the participants during the testing.

The charts below show the trends in reduced times to complete tasks in different rounds.

Timeline

Date	Task
August 2019	• Ensure CITI Training is complete and valid. • Prepare Milestones 1 & 2 • Prep needs Assessment, Literature Reviews) • Gather info needed for website.
September 2019	• Complete Assignment 1 - Past Project Review • Use reviews as a guide when brainstorming project • Prepare Milestone 3 & 4 (Participants, Purpose/Goal Statement) • Review & edit purpose statement using template • Prepare Draft Idea Presentation • Complete Assignment 2 - Idea Presentation for Faculty • Review faculty feedback and edit draft accordingly • Prepare Milestone 5 (Usability tasks) • Refine Purpose Statement/Goals & Research Questions • Create a Usability Protocol/Script with usability tasks • Complete Assignment 3 - Milestones 1-5 for CF Review
October 2019	• Begin writing detailed project plan. • Begin the IRB approval process. • Create data collection tools such as surveys, record sheets, journal/notes templates. • Complete Assignment 4 - Milestones 1-5 Feedback for CFs • Review feedback from CFs and make revisions accordingly • Prepare Milestone 6 (Methodologies) • Create evaluation instruments (surveys on Google Forms) • Refine Usability Protocol/Script and tasks • Complete Assignment 5 - Draft 1 Masters Project Proposal for IRB for CFs Review • Complete Assignment 6 - Draft 1 Masters Project Proposal for IRB Feedback for CFs Review • Review feedback from CFs and make revisions accordingly

November 2019	• Continue drafting and revising project plan
	• Begin outfitting the student non-fiction text with AR content.
	• Complete Assignment 7 - Peer Review Rubric 1
	• Prepare Milestone 7 (Project Design Strategies)
	  ○ Review and determine instructional strategies
	  ○ Determine visual design and layout of website
	  ○ Determine website platform
	• Complete Assignment 8 - Draft 1 Masters Project Proposal for IRB for Instructor Review
	• Begin building website prototype on platform
	• Complete Assignment 9 - Milestones 7 & 8 for CF Review
	• Complete Assignment 10 - Milestones 7 & 8 Feedback for CFs
	  ○ Review feedback from CFs and make revisions

	accordingly • Complete Assignment 11 - IRB Application for Instructor Review • Prepare Milestones 1-9 • Revise Masters Project Draft and IRB application based on instructor feedback • Complete Assignment 12 - Draft 2 Masters Project Proposal for CFs Review • Complete Assignment 12 - Draft 2 Masters Project Proposal for Feedback for CFs • Review feedback from CFs and make revisions accordingly
December 2019	• Continue outfitting the student non-fiction text with AR content. • Complete Assignments 14 - 19 • Finalize project plans for approval via UH IRB • Finalize project website prototype
January 2020	• Upon IRB approval begin project implementation conduct the usability study with participants • Recruit participants (email) • Consent forms (email) • Conduct Round 1 of Usability Test • Interview users for feedback • Compile and analysis feedback, make revisions accordingly
February 2020	• Conduct Round 2 of Usability Test ○ Interview users for feedback • Compile and analysis feedback, make revisions accordingly
March 2020	• Conduct Round 3 of Usability Test ○ Interview users for feedback ○ Compile and analysis feedback, make revisions accordingly • Complete final paper draft
April	• Create TCC Presentation Slides • Conduct TCC Presentation
May	• Complete final paper

Analysis & Results

Data collected was both qualitative and quantitative. Quantitative data will consist of data collected from the usability sessions. The data was analyzed and rated by the severity of the problem based on identifying user issues on a severity scale Nielsen, J. (1994). The four-point rating scale will rate the usability tasks problem severity as no usability problem, cosmetic, minor, serious, or catastrophic. A cosmetic problem need not be fixed unless extra time is available on project. A minor usability issue is where fixing this should be given low priority. A major usability issue will delay the users significantly, but will allow them to complete the tasks and is important to fix, so should be given high priority. A catastrophic issue will prevent the users from completing the tasks and is imperative to fix this before product can be released or on next iteration. Task completion time will be collected and analyzed. This will help in identifying issues and

contribute to iterations or improvement made.

The results of the usability study will be presented through various visual graphs, such as bar graphs. Bar graphs will be utilized for time it takes users to complete tasks and the problem severity ratings. To present qualitative data such as interview responses and open ended survey questions, visual word clouds will be utilized.

As illustrated in Figure 1, we asked our participants to find the faculty. Throughout all three rounds of usability testing, participants were able to easily find the faculty page from the schools website. There was a teacher in round 1, and another in round 3, had took longer to find the faculty page than normal. They had suggested to somehow making it easier to find. For majority of the users, they were able to find the faculty site in less than 5-7 seconds, so I did not do any changes to the original placement of the faculty site.

Round 1:

Average Nielson Severity Rating	Average time taken to find resource
1.4	6.6

Round 2:

Average Nielson Severity Rating	Average time taken to find resource
1	4.8

Round 3:

Average Nielson Severity Rating	Average time taken to find resource
1.8	6.6

Figure 1. Scenario 1 – Finding the faculty portal from the schools website.

In our first round, many users had a tough time finding the Infinite Campus Website as illustrated in Figure 2. Teachers have claimed that in person, the acronym of "IC" is used on campus to describe the website that teachers use to go to take student attendance and input grades. I had initially named the link to the source as IC, and many teachers were confused when asked to look for the website called "Infinite Campus". I had made changes to name the button as "Infinite Campus" before conducting the second round of usability tests. On the second round, I had renamed the button form IC to Infinite Campus. Many teachers were able to perform the task much faster and much quicker. Some improvements that were suggested were to move the Infinite Campus button up higher on the portal because it is a resource that many of the teachers use multiple times throughout the day. Prior to the third round, I had moved access to Infinite Campus up higher on the portal. In the third round, we see a decrease in the average amount of time needed to complete the usability task. Many of the users had discussed that they were pleased to find that the finding Infinite Campus through this method was much quicker than their previous method and many had explained that they will use the portal for this task in the future.

Round 1:

Average Nielson Severity Rating	Average time taken to find resource
3	17

Round 2:

Average Nielson Severity Rating	Average time taken to find resource
1.8	6.6

Round 3:

Average Nielson Severity Rating	Average time taken to find resource
1.8	3.6

Figure 2. **Scenario** 2 – Finding Infinite Campus

I had asked the users to find a website that we must conduct our EES observations on the faculty web portal. In our first round, we had quite a high average severity rating and many users took a long time to find the resource as illustrated in Figure 3. After discussion with many users on their troubles, many users have claimed that they only know how to access the website because of a custom name they used as a bookmark. Some users know it officially as PDE3, other users know it as, teacher evaluation, and others know it as "teacher auditing". Prior to the second round of usability study, I had made the name changes to PDE3. I conducted the second round of testing and although the average time to find the website was lower, I felt that it still took a lot of time to find. Prior to the third round of testing, I decided to name the resource to PDE3 – EES Observations. I noticed that many teachers in the first two rounds tended to know the resource as PDE3 or EES Observations. The usability test had much better results on the third round. Many were able to find the resource much quicker. It had helped because more people were able to understand that although the task we do as teachers are called EES Observations, we do that task on a web service and site called PDE3. After discussing with the teachers individually, many of the users had discussed that they were pleased to find that the finding PDE3 and or EES Observations Campus through this method was much quicker than their previous method and many had explained that they will use the portal for this task in the future. Many teachers had explained that placing the resource on the portal had helped them with the confusion of the different terms and slangs used on campus for doing EES observations.

Round 1:

Average Nielson Severity Rating	Average time taken to find resource
3	25

Round 2:

Average Nielson Severity Rating	Average time taken to find resource
2.4	19.6

Round 3:

Average Nielson Severity Rating	Average time taken to find resource
1.6	7.2

Figure 3. Scenario 3 – Finding Infinite Campus

I had asked the users to find a resource on the faculty portal to request for a substitute. I had labeled the resource as TSEAS, the official name of the resource that the DOE uses if teachers wish to request for subs online. On our first round of testing, we found that many teachers were not aware that there was a service to request for substitutes online, but seeing the words TSEAS had sparked a correlation of previous knowledge that teachers had a sub request site called TSEAS. Prior to the second round, I had changed the name of the resource to Sub Request from TSEAS, as illustrated in Figure 4. When conducting the second round, I found that although many users were able to find the sub requests much more quickly. After a discussion with this second round of users, they were able to find the SUB requests easily, but were confused when they were taken to a website called TSEAS.

The TSEAS website has no indication that it is there to requests substitutes. Many of the teachers explained that when they got to the resource, they were a bit confused if they arrived at the right destination. Prior to the third round, my changes to the name of the resources were changed to TSEAS – Sub Request. This seemed to allow most people to understand that a service called TSEAS was used to request a sub. We see a reduced average time taken to find the resource and a lower severity rating. Many of the users had discussed that they were pleased to find that there was even an alternate method to request for substitute teachers. They found this method much quicker than waiting until the next morning to call the office to rush to get a substitute teacher. Many had explained that they will use the portal for this task in the future.

Round 1:

Average Nielson Severity Rating	Average time taken to find resource
2.2	16.6

Round 2:

Average Nielson Severity Rating	Average time taken to find resource
2.4	19.6

Round 3:

Average Nielson Severity Rating	Average time taken to find resource
1.6	7.2

Figure 4. Scenario 4 – Finding resource to request for a sub

I had asked the users to find the resource to contact if they are not able to login to any of the DOE services they use. Prior to conducting the usability study, I had placed the password reset information in a clickable button called "Password Reset". The users of round 1 took some time to find the resource. Many of the users had claimed that "Password" reset had assumed that they forgot their password. They explained that they sometimes are not able to login, even if they know their password. For the second round, I made no changes as I did not have much feedback from the first round on how to improve. One the second round of testing, I actually have worse performance from the group of users. One of the users who found the resource relatively quick explained that it would be useful to just show the information on the page as a whole, instead of making people click into another page to find the information. I had decided to place the resource information directly onto the portal instead of making the information available after clicking a link. The third round went very well as illustrated in Figure 5. Many teachers were not aware that they had the power to self service their DOE logins. Many had explained that they will use the portal for this task in the future, in the event that they are not able to login.

Round 1:

Average Nielson Severity Rating	Average time taken to find resource
2.2	16.6

Round 2:

Average Nielson Severity Rating	Average time taken to find resource
2.4	19.6

Round 3:

Average Nielson Severity Rating	Average time taken to find resource
1.6	2.6

Figure 5. Scenario 5 – Finding resource to reset login passwords to DOE sites.

Discussion

I anticipated that the participants will find the Farrington Faculty Portal/Intranet a useful resource that they can use daily for their work duties. Many of the participants found the website easy to use and navigate. Many of the participants also found it tough to find some of the sites because the official name for certain services were not clearly defined. Although many of the older participants were hesitant in trying and using the faculty portal, many of them got accustomed to using it and even continue to use it for outside of the usability study. Many of the younger participants seemed to have given feedback on what would make the intranet/portal much easier to use or view on their plethora of devices.

I analyzed many of their designs and thoughts and I used it to improve on the website. The design of the website needs to fit the needs of many of the users and

faculty on campus through this usability study. In my design, I decided to use a grid layout. I hope that the introduction of the portal/intranet will help faculty at Farrington High School to easily find resources for their daily duties.

Conclusion

The goal of this usability study was to gauge participants' ability to navigate and locate information on the Farrington faculty intranet/portal. I wanted to make sure that participants would find the site effective and satisfying to use. The data that I collected from this usability study helped me to improve the Farrington faculty intranet/portal. The Farrington faculty intranet/portal website is an important resource for teachers to have as it will help them with their daily tasks. It has the potential to reduce the stress needed for teachers to complete their daily tasks and help them to find the resources needed for their faculty duties.

APPENDICES

Appendix A

Participant Recruitment Email

Hello [participant name]!

My name is Joshua Dimaya and I am a graduate student at the University of Hawai‘i at Mānoa in the College of Education. I am conducting a usability study for my Master’s degree in Learning Design and Technology research project.

The focus of my study is the ease of use of a teacher resource website/intranet portal for faculty and staff interested in accessing important DOE and Farrington High School resources in one place. In the study, I will be asking faculty and staff to participate by completing several short tasks using the website. I will also ask questions about the layout, usefulness, navigating the website, the user experience, and ease of use. The approximate time of each session is 10-20 minutes.

As a teacher and technology coordinator at FHS, I would like to invite you to participate in the study. The usability study session will take place on campus, in your classroom, or remotely online. All information will be kept strictly confidential. A report of this study will be available at the completion of the project. By participating in this research project your role as a faculty or staff status will not be impacted.

If you are interested in participating, please fill out this pre-survey: click here.

For more information or if you have additional questions, feel free to contact me directly at jndimaya@hawaii.edu.

Mahalo,
Joshua Dimaya

Appendix B

Participant Pre-Survey

The purpose of this pre-survey is to gather preliminary data in preparation for the usability study of the Farrington High School Faculty Portal.

This pre-survey will take approximately 1 minutes or less to complete. To help protect your confidentiality, this survey will not contain information that will personally identify you. The results of this survey will be used for purposes of my final research project at the University of Hawai‘i at Mānoa Learning Design and Technology (LTEC) 690 course.

Thank you for your participation!

How do you keep track of all of the DOE sites that you visit? (Check all that apply)
Bookmarks
Ask a colleague
Search links through email.
My computer remembers the link when I type it in partially.
Other :

If you were to be without your computer, what would you do to access the websites required to do your duties at Farrington High School.

Random User	Bookmarks	Ask a Colleague	Computer remembers link	If you were to be without your computer, what would you do to access the websites required to do your duties at Farrington High School.
1	1		1	I would only use my computer.
2	1		1	If I did not have my computer, I would not know how to get too many of the sites.
3	1		1	I can remember some of the sites
4	1			Google the websites!
5	1	1	1	I have my bookmarks synced with my email. I would sign in with my email.
6	1		1	I would search for the sites.
7	1	1	1	I would search for the sites or ask my coworkers
8	1	1	1	Call the front office.
9	1		1	I have my bookmarks synced with my Farrington Email
10	1		1	Ask my coworkers!
11		1		Ask the front office or the tech guys
12	1		1	I would search for the sites on Google
13	1		1	I would call or ask my coworkers.
14	1		1	I have my bookmarks synced with the emails I used.
15	1	1	1	I would call the front office or ask my corkers.

Appendix C

Post-Survey

Thank you for your participation in the usability study. Please complete this post survey. Your participation is voluntary.

The purpose of this post survey is to further measure your experience and provide insight about what work well and improvements that may need to be made.

This post survey will take approximately 1 minutes or less to complete. To help protect your confidentiality, this survey will not contain information that will personally identify you. The results of this survey will be used for purposes of my final research project at the University of Hawai‘i at Mānoa Learning Design and Technology (LTEC) 690 course.

Thank you again for your participation!

After using the Farrington Faculty Portal/Intranet,
Would you adopt it into your regular day workflow?

	After using the Farrington Faculty Portal/Intranet, Would you adopt it into your regular day workflow?
1	Yes.
2	Yes I like having everything I need to access all in one place.
3	Yay all the work links can be done from my ipad!
4	Of Course.
5	Yes, why did you not make this earlier.
6	Yes, I can do my work on my other devices!
7	This will make my jobs easier!
8	I can finally do a lot of my work from my phone!
9	Yes, much faster than searching through my emails for important links.
10	Yes, I have been taking my students on field trips lately and having access to request subs are amazing.
11	I'm old and always forget my passwords, so having access to a number to have it reset helps.
12	I can finally take grades and do attendance when I am not near a computer.
13	Yes, it tidies many of my bookmarks into one page.
14	Will use on all of my devices!
15	Yes, It clears up so many bookmarks in my bookmarks bar.

Appendix D
Post-Survey

Hello,
My name is Joshua Dimaya, and I'm going to be walking you through this usability session today.

The purpose of my project is to evaluate portal website containing information and resources to that support the Faculty of Farrington High School in their duties.

The session should take about 20-25 minutes.

The first thing I want to make clear right away is that I am testing the site usability, not you. You can't do anything wrong here. I am looking to observer and see how the site is used.

As you use the site, I'm going to ask you as much as possible to try to think out loud: to say what you're looking at, what you're trying to do, and what you're thinking. This will help me to collect data

Please be honest, I am doing this to improve the site.

If you have any questions as we go along, please do not hesitate to ask.

If you need to take a break at any point, please let me know.
Do you have any questions before we start?

(Await Responses)

Okay, let's begin!

Appendix E
Post-Survey

Task 1: Find the faculty portal on the www.farringtonhighschool.org page? a. Task completed: Yes / No: b. Time (seconds) required to complete task_____ Qualitative Analysis Interview (Will ask use about this task when survey when done):
Task 2: Now that we know how to get to the faculty website. You're trying to locate the website needed to take student attendance and grades, Infinite Campus Point to where you would click, and click on it. a. Task completed: Yes / No: b. Time (seconds) required to complete task_____ Qualitative Analysis Interview (Will ask use about this task when survey when done):
Task 3: You're working on your EES audit to keep you as a qualified teacher, Point to where you would click to visit the site to login onto to upload your lesson plans, and click on it. a. Task completed: Yes / No: b. Time (seconds) required to complete task_____ Qualitative Analysis Interview (Will ask use about this task when survey when done):
Task 4: You are looking to request for a substitute. Using the faculty portal, where can you find the website to request for a sub. a. Task completed: Yes / No: b. Time (seconds) required to complete task_____ Qualitative Analysis Interview (Will ask use about this task when survey when done):
Task 5: You forgot your password to your DOE email, inputting your grades and attendance and also logging in to upload lesson plans for your teacher audit. Using the faculty portal, where can you find the guide to do a self password reset? a. Task completed: Yes / No: b. Time (seconds) required to complete task_____ Qualitative Analysis Interview (Will ask use about this task when survey when done):

Appendix F
Task 1 Survey Results
Scenario – Finding the Faculty Page.

Round 1	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
1	4
3	20
1	3
1	3
Average Nielson Severity Rating	**Average time taken to find resource**
1.4	6.6

Round 2	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
1	3
1	12
1	3
1	3
Average Nielson Severity Rating	**Average time taken to find resource**
1	4.8

Round 3	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3

1	4
3	20
2	3
2	3
Average Nielson Severity Rating	**Average time taken to find resource**
1.8	6.6

Appendix G
Task 2 Survey Results
Scenario – Finding Infinite Campus

Round 1	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	12
3	18
3	20
4	17
4	18
Average Nielson Severity Rating	**Average time taken to find resource**
3	17
Round 2	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
2	4
2	20
2	3
2	3

Average Nielson Severity Rating	**Average time taken to find resource**
1.8	6.6
Round 3	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
2	4
2	4
2	3
2	4
Average Nielson Severity Rating	**Average time taken to find resource**
1.8	3.6

Appendix H
Task 3 Survey Results
Scenario – Finding EES Observations

Round 1	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
4	27
3	25
3	25
2	23
3	25
Average Nielson Severity Rating	**Average time taken to find resource**
3	25

Round 2	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
3	28
4	29
2	19
2	19
Average Nielson Severity Rating	**Average time taken to find resource**
2.4	19.6
Round 3	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	7
2	8
2	7
2	7
1	7
Average Nielson Severity Rating	**Average time taken to find resource**
1.6	7.2

Appendix I
Task 4 – Finding Website to request for a sub

Round 1	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	17

3	17
3	17
2	16
2	16
Average Nielson Severity Rating	**Average time taken to find resource**
2.2	16.6
Round 2	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
3	28
4	29
2	19
2	19
Average Nielson Severity Rating	**Average time taken to find resource**
2.4	19.6
Round 3	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
1	4
3	20
2	6
1	3
Average Nielson Severity Rating	**Average time taken to find resource**

1.6	7.2

Appendix J
Task 5 – Finding Resource to reset your login password

Round 1	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	17
3	17
3	17
2	16
2	16
Average Nielson Severity Rating	**Average time taken to find resource**
2.2	16.6
Round 2	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**
1	3
1	4
3	20
1	3
1	3
Average Nielson Severity Rating	**Average time taken to find resource**
1.4	6.6
Round 3	
Nielson Severity Scale Rating	**Time taken to find the Complete Task (seconds)**

1	2
1	2
2	3
2	3
2	3
Average Nielson Severity Rating	**Average time taken to find resource**
1.6	2.6

Appendix K
Nielson Severity Rating

Nielson Severity Rating	
Severity	Severity Description
1	Problem is cosmetic, need not to be fixed unless these are extra time on the project. User finds resource in 1-3 seconds.
2	Minor Usability Issue, fixing problems should be low priority. User takes 4-9 seconds to find resource.
3	Major Usability Problem, important to fix and should be given high priority in fixing. User takes more than 10 seconds to find resource.
4	Extremely Major Usability problem, unusable. User unable to find resource.

Appendix L
IRB Approval

CITI PROGRAM

Completion Date 03-Apr-2019
Expiration Date 02-Apr-2022
Record ID 30792099

This is to certify that:

Joshua Nolan Dimaya

Has completed the following CITI Program course:

Information Privacy Security (IPS) (Curriculum Group)
Exempt Researchers and Key Personnel IPS (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

University of Hawaii

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w84b3bbe2-92cc-4268-b500-2ac680fb4c74-30792099

CITI PROGRAM

Completion Date 04-Mar-2019
Expiration Date 03-Mar-2022
Record ID 30792100

This is to certify that:

Joshua Nolan Dimaya

Has completed the following CITI Program course:

Human Subjects Research (HSR) (Curriculum Group)
Exempt Researchers and Key Personnel (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

University of Hawaii

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w3448f8b4-6e1e-411c-9919-04b2e1b4fb59-30792100

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